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10/776,456

02/11/2004

Shihong Lao

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3574

7590
Jonathan P. Osha
OSHA & MAY L.L.P.
Suite 2800
1221 McKinney Street
Houston, TX 77010

09/27/2007

EXAMINER

KRASNIC, BERNARD

ART UNIT

PAPER NUMBER

2624

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|-------------------------------|------------------------------|--|
| Office Action Summary | Application No. 10/776,456 | Applicant(s) LAO, SHIHONG | |
| | Examiner Bernard Krasnic | Art Unit 2624 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 July 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. The amendment filed 7/20/2007 have been entered and made of record.

2. In response to the amendments filed on 7/20/2007:

The "Objections to the abstract" have been entered and therefore the Examiner withdraws the objections to the abstract.

The "Objections to the specification" have been entered, but the Applicant has not amended a few of the addressed specification objections and therefore the Examiner has once again addressed these issues.

The "Objections to the claims" have been entered, but the Applicant has not amended a few of the addressed claim objections and therefore the Examiner has once again addressed these issues.

The "Claim rejections under 35 U.S.C. 101" have been entered and therefore the Examiner withdraws the rejections under 35 U.S.C. 101.

The "Claim rejections under 35 U.S.C. 112, second paragraph" have been entered, but the Applicant has not amended a few of the addressed 35 U.S.C. 112 second paragraph issues and therefore the Examiner has once again addressed these issues.

3. Applicant's arguments with respect to claims 1-27 have been considered but are moot in view of the new ground(s) of rejection.

Art Unit: 2624

4. Applicant's arguments filed 7/20/2007 have been fully considered but they are not persuasive.

The Applicant alleges, "Accordingly, claim 1 requires ..." in page 14, "Center, in contrast to independent claim 1 ..." in page 14, "As discussed above, an inference ..." in pages 14-15, "In contrast, Center fails to disclose any elements ..." in page 15, and "Therefore, Center fails to show or suggest at least these limitations ..." in page 15, and states respectively that Center does not disclose or suggest at least the amended limitations "in part for inferring at least one of race, age, and sex as a class of the object of the face image" and "a memory for storing contents of correction process of the face image as predetermined data corresponding to each class" as recited in claim 1. Center does teach attributes of the face are of the race, age, and sex in paragraph [0028] when describing templates being used to match a range of appearance of the different types of faces [face template matching typically use race, age, and sex attributes]. To make this issue clearer, the Examiner has incorporated the new reference Shakhnarovich ("A unified learning framework for real time face detection and classification" - IEEE - May 2002) into the rejection to teach that the class of the object is at least gender / sex and ethnicity / race. However Center does not disclose a memory for storing contents of correction process of the face image as predetermined data corresponding to each class. The Kinjo reference as applied in the previous Office Action is incorporated into the rejection to teach that the correction process performs the correction using the designated registered correction process information of the specific person (see Kinjo, paragraph [0023], "registers predetermined image

Art Unit: 2624

processing conditions” and then “selects image processing conditions corresponding to the identified specific person to perform the image processing based on the selected image processing conditions” wherein the specific person is taught by Shakhnarovich to be the specific classes of gender or/and ethnicity). Therefore, the amended limitations have not put claim 1 in condition for allowance. Further claim rejections are discussed below.

The Applicant alleges, “Claim 6 ...” in pages 15-16, and states respectively that Kinjo also fails to show or suggest the amended limitation as recited in claim 1. However as discussed above, Center, Kinjo, and Shakhnarovich do teach the amended independent claim 1. Therefore dependent claim 6 is still not in condition for allowance.

The Applicant alleges, “Claims 8 and 9 ...” in page 16, and states respectively that dependent claims 8 and 9 are also patentable for at least the same reasons as 1 and 6. However as discussed above, Center, Kinjo, and Shakhnarovich do teach the amended independent claim 1. Therefore dependent claims 8 and 9 are still not in condition for allowance.

The Applicant alleges, “Claims 10-21, 23, 24, 26 and 27 ...” in pages 16-17, and states respectively that independent claims 10, 17, 23, 24, 26, and 27 have been amended similarly as claim 1 and therefore are in condition for allowance. However as discussed above, Center, Kinjo, and Shakhnarovich do teach the amended independent claim 1. Similarly claims 10-21, 23, 24, 26 and 27 are still not in condition for allowance. Therefore, claims 1-27 are not in condition for allowance. The claim rejections are discussed below.

Art Unit: 2624

Specification

5. The disclosure is objected to because of the following informalities:

Page 1, line 4: The -- CROSS REFERENCE TO RELATED ART -- Section must be included in the specification above the "BACKGROUND OF THE INVENTION" with the appropriate related applications, which for this application is -- JAPAN 033485/2003 02/12/2003 --.

Appropriate correction is required.

Claim Objections

6. Claims 7, 14, 19, 22-23, and 25-26 are objected to because of the following informalities:

Claim 22, line 7, claim 25, line 9 respectively: "determining the contents of correction process" should be -- determining contents of a correction process --.

Claims 7, 14, and 19, line 3 respectively: "with information indicating the position" should be -- with information indicating a position --.

Claim 23, lines 6-7, claim 26, lines 8-9 respectively: "the information required" should be -- an information required --.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 2, 23 and 26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Re Claim 2, line 3: The limitation "sex as the attributes" lacks clear antecedent basis.

Re Claim 23, line 6, claim 26, line 8 respectively: The limitation "registered therein the feature amounts" lacks clear antecedent basis. It is suggested to be -- registered therein feature amounts --.

Re Claim 26, lines 14-15: The limitation "wherein the contents of the correction process are stored as predetermined data corresponding to each class in a memory" lacks clear antecedent basis. It is suggested to be -- wherein the information required for correction are registered as predetermined data corresponding to each class -- (see amended claim 23 for help).

Appropriate correction is required.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Center (US 2002/0113862 A1, as applied in previous Office Action) in view of Kinjo (US 2002/0015514 A1, as applied in previous Office Action) and Shakhnarovich ("A unified learning framework for real time face detection and classification" - IEEE - May 2002).

Re Claim 1: Center discloses an image editing apparatus / video conferencing system (see paragraph [0002], [0027], [0018], abstract) comprising an image input part / camera or CPU for inputting an image picked up of a person / face of a person (see Fig. 1, paragraphs [0018], [0003], and [0027], the computer is connected to the camera and they interact in real time since this is video conferencing); a face image detection part / locate face for detecting a face image of an object / person contained in the input image (see Fig. 1, paragraphs [0018], [0003]-[0004], and [0027]); an inference part / evaluate image quality for inferring at least one of race, age and sex as a class of the object / range of appearance of the face / types of face image based on the feature amounts / color or motion analysis in an image area containing the face image detected by the face image detection part (see Fig. 1, paragraphs [0020], [0025], [0004]); a determining part / evaluate image quality for determining the contents of correction process / information used for adjusting the color balance of the face image based on the result of

Art Unit: 2624

inference / evaluated information or characteristics of the face by the inference part (see Fig. 1, paragraphs [0020] and [0004]); a face image correction part / evaluate image quality for executing / adjusting the correction process / information used for adjusting the color balance on the face image according to the contents determined by the determining part (see Fig. 1, paragraphs [0020] and [0004]); and an image output part / other participant of desktop video conferencing for outputting an image corrected / adjusted by the face image correction part (see paragraphs [0020] and [0004], paragraph [0054], lines 6-13).

However Center fails to specifically teach the class is at least one of race, age, and sex and a memory for storing contents of correction process of the face image as predetermined data corresponding to each class.

Shakhnarovich discloses the class [Centers range of appearance] is at least one of race / ethnicity, age and sex / gender (see Shakhnarovich, Section 1 Introduction, Section 1.2 Gender classification, Section 1.3 Ethnicity Classification).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Center using Shakhnarovich's teachings by including the different gender and ethnicity classes to Centers types of faces with appearance information and characteristics in order to divide the different people that are being face tracked into specific demographic classes (see Shakhnarovich, Section 1 Introduction, lines 4-5).

However Center as modified by Shakhnarovich still fails to specifically teach a memory for storing contents of correction process of the face image as predetermined data corresponding to each class.

Kinjo discloses a memory for storing / registering contents of correction process / predetermined image processing conditions of the face image as predetermined data / predetermined corresponding to each class / for each specific person's face and determining / selecting the contents / conditions of the face image stored in the memory / registry (see Kinjo, paragraph [0023], abstract, "registers predetermined image processing conditions" and then "selects image processing conditions corresponding to the identified specific person to perform the image processing based on the selected image processing conditions" wherein the specific person is taught by Shakhnarovich to be the specific classes of gender and/or ethnicity).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to further modify Center, as modified by Shakhnarovich, using Kinjo's teachings by including the ability to tap into the registered information and select the appropriate correction processing information in order to attain good adjustment results which have natural feeling adjustment for the specific person's face (see Kinjo, paragraphs [0017], [0020], and [0023]).

As to claim 22, the claim is the corresponding method claim to claim 1 respectively. The discussions are addressed with regard to claim 1.

Art Unit: 2624

As to claim 25, the claim is the corresponding program claim to claim 1 respectively. The discussions are addressed with regard to claim 1.

Re Claim 2: Center further discloses the inference part / evaluate image quality includes a part for executing the process of inferring / evaluation at least one of the race, age and sex as the attributes / range of appearance (see Center, Fig. 1, [0028], lines 4-9, [0048], the evaluation includes any combination of the template matching, motion detection, background differencing, and color analysis, in this case the template matching searches for a face using templates that represent the range of appearance of the different types of faces which are known as eigenfaces and these eigenfaces typically use race and sex). Shakhnarovich also teaches the attributes of the face are at least one of the race / ethnicity, age, and sex / gender (see Shakhnarovich, Section 1 Introduction, Section 1.2 Gender classification, Section 1.3 Ethnicity Classification).

Re Claim 3: Center further discloses the face image detection part / locate face includes a part for rectifying / correcting by adjustment or calculation the result of detection of the face image in response to a rectify operation for the result of detection of the face image (see paragraphs [0018]-[0019], the location and relative size of the face image is detected and using this information, the image is cropped to a portrait size and then resized and therefore most of the background is eliminated by having the detected face image actually only consist of the face image).

Art Unit: 2624

Re Claim 4: Center further discloses the inference part / evaluate image quality includes a part for rectifying / correcting by adjustment or calculation the inference result / information or characteristics of the face image in response to an operation of rectifying the inference result (see paragraphs [0020], [0025], [0004], [0028], [0048], the evaluating image quality includes an evaluation of the attributes or range of appearance and adjusts these attributes or range of appearance by color balancing).

Re Claim 5: Center further discloses the face image correction part / evaluate image quality includes a part for executing / adjusting the recorection / camera brightness and contrast of the face image after the correction process / color balancing based on the rectified contents / corrected by adjustment or calculation in response to an operation of rectifying the contents of the correction (see paragraphs [0020] and [0004], a correction process by adjusting the color balancing is done and then an adjustment to the brightness and contrast is also done which is basically a recorection), and wherein the image output part outputs the latest corrected image / color balanced, brightness adjustment and contrast adjustment at the particular time point in response to the finalize operation (see paragraphs [0020] and [0004], paragraph [0054], after color balancing and then after brightness adjustment and contrast adjustment, the final image is outputted and directed to the other participant of desktop video conferencing).

Re Claim 6: Center further comprising a registration processing part / recognition of user or users for registering in a memory / RAM of computer a registered information /

Art Unit: 2624

template of user or users on the feature amounts / color or motion analysis for the range of appearance of the face image detected by the face image detection part / locate face in correspondence with the contents of correction process executed by the face image correction part, wherein the face image detection part / locate face is set to detect, in accordance with the operation of designating registered information / recognize a particular user or users, a face image from the input image by a search process / search for a face or faces sought using the feature amounts / color and motion analysis for range of appearance contained in the designated registered information / template of user or users (see paragraph [0028], lines 7-16, a template or multiple templates of the detected user or users are pre-stored and with the information derived using these templates a search for a face or faces represented by the range of appearance of the different face or faces may be sought), and wherein the face image correction part / evaluate image quality, upon detection of the face image by the search process / search for a face or faces sought, executes the correction process on the detected face image according to the contents of correction process contained in the designated registered information.

However, Center fails to disclose or fairly suggest respectively that the correction process performs the correction using the designated registered correction process information.

Kinjo discloses the correction part executes the correction process on the detected face image according to the contents of correction process contained in the designated registered information / predetermined image processing conditions for each

Art Unit: 2624

specific person (see paragraph [0023], abstract, after predetermined image processing conditions for each specific person in advance along with the face detection is done, the correction process selects image processing correcting conditions corresponding to the specific identified face or faces and applies the correction processing).

Re Claim 7: Center further discloses the face image detection part / locate face detects, upon receipt of an image linked with the information indicating the position / location of the face image of an object from the image input part, the face image based on the link information (see paragraph [0048], carrying information gives the relative position of the face for the next frame image which will be analyzed, therefore when an image is analyzed it has position information for support in detection).

Re Claim 8: Center further discloses the image output part / camera or CPU includes a part for printing the image after correction.

Although Center fails to disclose or fairly suggest that the output containing the corrected image could be printed, it would be obvious to one of ordinary skill in the art at the time the invention was made to have such a feature because any computer (Center does teach a computer) has the capability to print an output image when connected to a printer (see US 2002/0015514 A1, Fig. 4, ref. No. 16, the printer may print out the corrected face detection image).

Kinjo also discloses a part for printing the corrected image (see Kinjo, paragraph [0221]).

Art Unit: 2624

Re claim 9: Center further discloses the image input part / camera or CPU includes a part for receiving the image to be processed, transmitted through a computer network / USB (see paragraph [0027], the camera takes the image and transmits the image using the USB connector to a CPU which is part or a computer network), and wherein the image output part / other participant of desktop video conferencing either prints a corrected image or transmits, through the computer network / across a network for video conferencing (see paragraph [0054], a transmission is made for video conferencing which typically is set up through a computer network such as wireless network or a basic in-work LAN network), the corrected image either to a transmitter / through network of the image or a destination designated by the transmitter / other participant of desktop video conferencing.

Although Center fails to disclose or fairly suggest that the output containing the corrected image could be printed, it would be obvious to one of ordinary skill in the art at the time the invention was made to have such a feature because any computer (Center does teach a computer) has the capability to print an output image when connected to a printer (see US 2002/0015514 A1, Fig. 4, ref. No. 16, the printer may print out the corrected face detection image).

Kinjo also discloses a part for printing the corrected image (see Kinjo, paragraph [0221]).

Re Claim 10: Center discloses an image editing apparatus / video conferencing system (see paragraph [0002], [0027], [0018]) comprising an image input part / camera or CPU

Art Unit: 2624

for inputting an image picked up of a person / face of a person (see Fig. 1, paragraphs [0018], [0003], and [0027], the computer is connected to the camera and they interact in real time since this is video conferencing); a face image detection part / locate face for detecting a face image of an object / person contained in the input image (see Fig. 1, paragraphs [0018], [0003]-[0004], and [0027]); a registration part / evaluate image quality for holding the registered information / template of user or users including the feature amounts / color or motion analysis for range of appearance of the face image of each of a predetermined number of objects / face templates of user or users which are classified into at least one of race, age, and sex / range of appearance of faces, and an information required for correcting the face image in correspondence with an identification information unique to the object / user or users (see paragraph [0028], lines 7-16, a template or multiple templates of the detected user or users are pre-stored and with the information derived using these templates a search for a face or faces represented by the range of appearance of the different face or faces may be sought); an inference part / evaluate image quality for estimating / evaluating at least one of race, age, and sex as a class / range of appearance of faces of the object / user or users by comparing the feature amounts / color or motion analysis for range of appearance of the face image detected by the face image detection part / locate face with the information registered / template of user or users in the registration part (see paragraphs [0020] and [0004]); a face image correction part / evaluate image quality for executing the process of correcting / adjusting the color balancing the detected face image using the registered information of the object estimated by the inference part (see

Art Unit: 2624

paragraphs [0020] and [0004]); and an image output part / other participant of desktop video conferencing for outputting the image corrected / adjusted by the face image correction part (see paragraphs [0020] and [0004], paragraph [0054], lines 6-13).

However Center fails to specifically teach the class is at least one of race, age, and sex and that the correction process performs the correction using the designated registered correction process information.

Shakhnarovich discloses the class [Centers range of appearance] is at least one of race / ethnicity, age and sex / gender (see Shakhnarovich, Section 1 Introduction, Section 1.2 Gender classification, Section 1.3 Ethnicity Classification).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Center using Shakhnarovich's teachings by including the different gender and ethnicity classes to Centers types of faces with appearance information and characteristics in order to divide the different people that are being face tracked into specific demographic classes (see Shakhnarovich, Section 1 Introduction, lines 4-5).

However Center as modified by Shakhnarovich still fails to specifically teach that the correction process performs the correction using the designated registered correction process information.

Kinjo discloses the correction part executes the correction process on the detected face image according to the contents of correction process contained in the designated registered information / predetermined image processing conditions for each specific person (see paragraph [0023], abstract, "registers predetermined image

Art Unit: 2624

processing conditions” and then “selects image processing conditions corresponding to the identified specific person to perform the image processing based on the selected image processing conditions” wherein the specific person is taught by Shakhnarovich to be the specific classes of gender and/or ethnicity).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to further modify Center, as modified by Shakhnarovich, using Kinjo’s teachings by including the ability to tap into the registered information and select the appropriate correction processing information in order to attain good adjustment results which have natural feeling adjustment for the specific face or faces of people (see Kinjo, paragraphs [0017], [0020], and [0023]).

As to claim 23, the claim is the corresponding method claim to claim 10 respectively. The discussions are addressed with regard to claim 10.

As to claim 26, the claim is the corresponding program claim to claim 10 respectively. The discussions are addressed with regard to claim 10.

As to claim 17, the discussions are addressed with respect to claims 1 and 10.

As to claim 24, the claim is the corresponding method claim to claim 17 respectively. The discussions are addressed with regard to claim 17.

As to claim 27, the claim is the corresponding program claim to claim 17 respectively. The discussions are addressed with regard to claim 17.

As to claims 11-16, the discussions are addressed with respect to claims 3-5 and 7-9.

As to claims 18-21, the discussions are addressed with respect to claims 6-9.

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bernard Krasnic whose telephone number is (571) 270-1357. The examiner can normally be reached on Mon-Thur 8:00am-4:00pm and every other Friday 8:00am-3:00pm.

Art Unit: 2624

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jingge Wu can be reached on (571) 272-7429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Bernard Krasnic
September 18, 2007



SAMIR AHMED
PRIMARY EXAMINER